

IN THE CLAIMS

Please amend claims as shown below.

Claim 1. (Currently Amended) A spray nozzle, comprising:

a substantially flat discharge surface lying in a single plane;

an orifice disposed on the discharge surface;

an impingement surface oppositely facing the orifice, the impingement surface oriented at an impingement angle measured relative to a centerline of the orifice, ~~the impingement angle being 90 degrees or less~~;

a deflection ridge, the deflection ridge bridging a gap between the impingement surface and the discharge surface, the deflection ridge defining a spray angle which limits the discharge of fluid; and

a fluid fitting in fluid connection with the orifice, the fluid fitting adapted to receive a pressurized fluid

and wherein the deflection ridge includes a filleted corner which smoothly joins with the impingement surface.

Claim 2. (canceled)

Claim 3. (canceled)

Claim 4. (canceled)

Claim 5. (Withdrawn By Examiner) The spray nozzle of claim 1, wherein the deflection ridge comprises two filleted corners, the filleted corners intersecting at an angle defining the spray angle.

Claim 6. (Withdrawn By Examiner) The spray nozzle of claim 5, wherein the two filleted corners smoothly join with the impingement surface.

Claim 7. (Withdrawn By Examiner) The spray nozzle of claim 5, wherein the spray angle is about 100 degrees to about 160 degrees.

Claim 8. (Currently Amended) A spray nozzle, comprising:

a substantially flat discharge surface lying in a single plane;

an orifice disposed on the discharge surface;

an impingement surface oppositely facing the orifice, the impingement surface oriented at an impingement angle measured relative to a centerline of the orifice, the impingement angle being 90 degrees or less;

a deflection ridge, the deflection ridge bridging a gap between the impingement surface and the discharge surface, the deflection ridge defining a spray angle which limits the discharge of fluid; and

a fluid fitting in fluid connection with the orifice, the fluid fitting adapted to receive a pressurized fluid and, wherein the deflection ridge comprises a filleted corner and a sharp corner, the filleted corner and the sharp corner intersecting at an angle defining the spray angle.

Claim 9. (canceled).

Claim 10. (Original) The spray nozzle of claim 8, wherein the filleted corner and the impingement surface join at a sharp ridge.

Claim 11. (Original) The spray nozzle of claim 8, wherein the filleted corner extends past the intersection of the filleted corner and the sharp corner and forms a spherical indentation therein.

Claim 12. (Original) The spray nozzle of claim 8, wherein the sharp corner further comprises a trailing edge curve, the trailing edge curve extending towards the filleted corner at a distal end of the sharp corner.

Claim 13. (Original) The spray nozzle of claim 8, wherein the sharp corner further comprises a leading edge curve, the leading edge curve extending away from the filleted corner at the intersection of the filleted corner and the sharp corner.

Claim 14. (Previously Presented) A spray nozzle system, comprising:

a body comprising a discharge surface, an orifice disposed on the discharge surface, and a fluid fitting in fluid connection with the orifice, the fluid fitting adapted to receive a pressurized fluid; and

a spray head removably mounted to the body, the spray head comprising:

an impingement surface, the impingement surface oppositely facing the discharge surface, the impingement surface oriented at an impingement angle measured relative to a centerline of the orifice, the impingement angle being 90 degrees or less; and

a deflection ridge, the deflection ridge bridging a gap between the impingement surface and the discharge surface, the deflection ridge defining a spray angle which limits the discharge of fluid

wherein the deflection ridge comprises a filleted corner and a sharp corner, the filleted corner and the sharp corner intersecting at an angle defining the spray angle.

Claim 15. (Original) The system of claim 14, wherein the impingement angle is generally 85 degrees.

Claim 16. (Original) The system of claim 14, wherein the deflection ridge comprises a filleted corner.

Claim 17. (Original) The system of claim 16, wherein the filleted corner smoothly joins with the impingement surface.

Claim 18 –20 (Canceled)

Claim 21. (Canceled)

Claim 22. (Previously Presented) The system of claim 14, wherein the spray angle is about 80 degrees to about 120 degrees.

Claim 23. (Previously Presented) The system of claim 14, wherein the filleted corner and the impingement surface join at a sharp ridge.

Claim 24. (Previously Presented) The system of claim 14, wherein the filleted corner extends past the intersection of the filleted corner and the sharp corner and forms a spherical indentation therein.

Claim 25. (Previously Presented) The system of claim 14, wherein the sharp corner further comprises a trailing edge curve, the trailing edge curve extending towards the filleted corner at a distal end of the sharp corner.

Claim 26. (Previously Presented) The system of claim 14, wherein the sharp corner further comprises a leading edge curve, the leading edge curve extending away from the filleted corner at the intersection of the filleted corner and the sharp corner.

Claim 27. (Original) The system of claim 14, wherein the spray head is interchangeable on the body.

Claim 28. (Currently Amended) A method of dispersing fluid in varying patterns, comprising:

discharging a pressurized fluid from an orifice onto an removable and interchangeable impingement surface, the impingement surface oriented at a deflection angle measured relative to a centerline of the orifice, the angle being less than 90 degrees each interchangeable impingement surface having a different angle;

deflecting the fluid at the impingement surface to form an impingement flow; and

deflecting the impingement flow at a deflection ridge to restrict an exit plume to a limited circumferential angle

and wherein limiting the exit plume to a limited circumferential angle further comprises deflecting the impingement flow using a filleted corner and a sharp corner, the filleted corner and the sharp corner intersecting at an angle defining a spray angle.

Claim 29. (canceled).

Claim 30. (canceled).

Claim 31. (Withdrawn By Examiner) The method of claim 28, wherein limiting the exit plume to a limited circumferential angle further comprises deflecting the impingement flow using two filleted corners, the filleted corners intersecting at an angle defining the spray angle.

Claim 32. (canceled)

Claim 33. (canceled)

Claim 34. (canceled).

Claim 35. (canceled).

Claim 36. (Original) A spray nozzle, comprising:

- a body, comprising:

- a substantially planar discharge surface;

- a fluid fitting on an end of the body away from the discharge surface; and

- an orifice disposed on the discharge surface and in fluid connection with the fluid fitting; and

- a spray head removably attached to the body, comprising:

- a substantially planar sealing surface interfaceable with the discharge surface of the body, the sealing surface having a generally triangular shape with a triangular base and a rounded triangular tip opposite the triangular base;

- a planar impingement surface indented in the sealing surface, the impingement surface oppositely facing the orifice when the spray head is attached to the body, the impingement surface oriented at an impingement angle measured relative to a centerline of the orifice, the impingement angle being 90 degrees or less; and

a deflection ridge at the intersection of the impingement surface and the sealing surface, the deflection ridge being at least in part adjacent to the triangular base of the sealing surface.

Claim 37. (Original) The spray nozzle of claim 36, wherein the impingement angle is generally 85 degrees.

Claim 38. (Original) The spray nozzle of claim 36, wherein the deflection ridge comprises a fillet smoothly joined with the impingement surface.

Claim 39. (Original) The spray nozzle of claim 36, wherein the deflection ridge comprises two filleted corners smoothly joined with the impingement surface, the filleted corners intersecting at an angle defining the spray angle.

Claim 40. (Canceled)

Claim 41. (Original) The spray nozzle of claim 36, wherein the deflection ridge comprises a filleted corner and a sharp corner, the filleted corner and the sharp corner intersecting at an angle defining the spray angle.

Claim 42. (Original) The spray nozzle of claim 41, wherein the spray angle is about 80 degrees to about 120 degrees.

Claim 43. (Original) The spray nozzle of claim 41, wherein the filleted corner and the impingement surface interface at a sharp ridge.

Claim 44. (Original) The spray nozzle of claim 41, wherein the filleted corner extends past the intersection of the filleted corner and the sharp corner and forms a spherical indentation therein.

Claim 45. (Original) The spray nozzle of claim 41, wherein the sharp corner further comprises a trailing edge curve, the trailing edge curve extending towards the filleted corner at a distal end of the sharp corner.

Claim 46. (canceled).

Claim 47. (canceled).

Claim 48. (New) A spray nozzle system, comprising:

a first part having:

- a) a discharge surface;
- b) an orifice disposed on the discharge surface;
- c) a fluid fitting in fluid connection with the orifice, the fluid fitting

adapted to receive a pressurized fluid

a second removable part having:

a) an impingement surface oppositely facing the orifice, the impingement surface oriented at an impingement angle measured relative to a centerline of the orifice, the impingement angle being 90 degrees or less;
a deflection ridge, the deflection ridge bridging a gap between the impingement surface and the discharge surface, the deflection ridge defining a spray angle which limits the discharge of fluid and having a filleted corner which smoothly joins with the impingement surface.

Claim 49. (New) The nozzle according to claim 48 wherein said discharge surface is substantially planar and wherein said second part includes a plurality of parts each having a predetermined different impingement angle.